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# Who wants to play Zombie?

## A survey of the players on ZOMBILINGO

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### Abstract

We present here the results of two surveys we led on ZOMBILINGO’s players, aiming at learning who they are and what are their motivations in playing the game, in order to improve the participation in the game.

## 1 ZOMBILINGO

ZOMBILINGO<sup>1</sup> is an open source<sup>2</sup> game with a purpose (GWAP) for dependency syntax annotation that is described in (Guillaume et al., 2016). We are not aware of any other GWAP successfully addressing syntax annotation. As of February 23<sup>th</sup>, 2017, it has allowed 986 players to produce 214,082 annotations on various French corpora, with a surprisingly good quality<sup>3</sup>. However, this quality cannot be achieved if the relations are not played by enough players: we obtain 0.69 in F-measure on average for the less played relations. Moreover, the participation decreases drastically when we stop advertising the game.

We therefore need to understand our players better, to know who they are and what makes them play. We sent a first questionnaire (*Q1*) on September 5th, 2016, separating the heavy players (*Q1<sub>HP</sub>*) from the lighter ones (*Q1<sub>LP</sub>*). We considered that a player is a heavy player if s/he has produced more than 500 annotation or if s/he has played often (more than 5 distinct days). For *Q1<sub>LP</sub>*, the survey contained an additional question concerning the reasons why they do not play more.

We decided to send a second questionnaire on February 10th, 2017 (*Q2*) to the new players. This time, we sent only one questionnaire because the criteria used to split heavy from light player was difficult to apply on a shorter time period and

we let the players perform a self-evaluation: every player has the additional question about the reasons for which they do not play more with a newly added possible answer “I already play a lot”. Players choosing this answer are considered heavy players.

## 2 Getting to know the players

### 2.1 Participation to the Surveys

For *Q1*, out of the 515 emails sent (to the users who gave us a valid email address), we got 56 answers (which represents 11%). The response rate is slightly higher for *Q2*, with 53 answers out of 285 sent emails, i.e. 19%. This improvement is probably due to the fact that the new players were attracted to ZOMBILINGO by reading an article on games for citizen science in a French mainstream scientific journal<sup>4</sup> and are therefore more willing to participate to such a survey.

This represents a total of 109 responses out of the 986 registered players (i.e. 11%), 89 of whom were light players (38 from *Q1* and 51 from *Q2*) and 20 heavy players (18 from *Q1* and 2 from *Q2*). Unsurprisingly, the response rate has been considerably higher for heavy players, with 42% responses out of 43 emails for *Q1<sub>HP</sub>*, as compared to 8% of the 472 emails for *Q1<sub>LP</sub>*.<sup>5</sup>

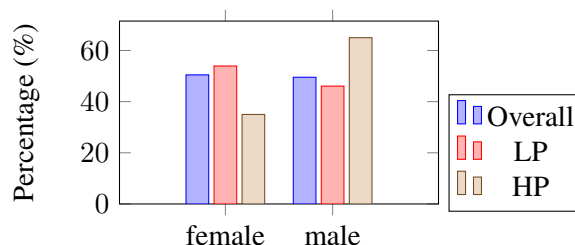


Figure 1: Gender of the players.

<sup>1</sup>See: <http://zombilingo.org/>.

<sup>2</sup>See: <https://github.com/zombilingo>.

<sup>3</sup>0.9 in F-measure on average for the highly played relations.

<sup>4</sup>SCIENCES ET AVENIR.

<sup>5</sup>For *Q2* the distinction cannot be made, as we sent only one questionnaire.

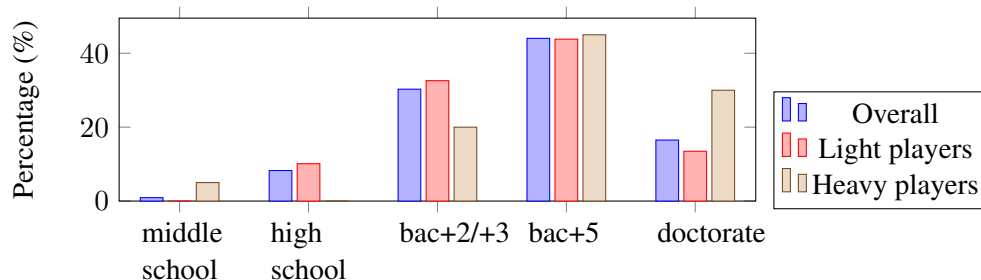


Figure 2: Level of schooling/study of the players.

## 2.2 Who are the Players?

As shown in Figure 1, ZOMBILINGO attracts as many female as male players. However, males represent a large majority of the heavy players (65%). This contrasts with the results for PHRASE DETECTIVES (65% of women) and JEUXDE-MOTS (60% of women) (Chamberlain et al., 2013). However, our study is more precise, as it takes the difference between heavy and light players into account.

About 80% of the players are between 21 and 60, with more between 21 and 40 in the heavy players (45%) and 17% of players who are more than 60 in the light players.

As Figure 2 shows, ZOMBILINGO’s players are very well-educated, with 75% of the heavy players having at least a Master’s degree (bac+5). The results are more heterogeneous amongst light players, with 32% having a Bachelor’s degree (bac+2/+3) and “only” 57% a Master’s degree or more. This, obviously, can be explained by the academic environment we live in: our personal network is very well-educated. This is confirmed by the domain of activity they declare: 25% of the heavy players come from the natural language processing field and 15% from linguistics, which means that 40% of our most active producers originate more or less from our domain. This is less the case for light players, with more than 74% declaring they work in a different domain.

## 2.3 What are their Motivations?

When asked how they heard about the game, 50% of the heavy players reported that they know someone from the project and 15% that it is from word of mouth. The percentage drops to respectively 28% and 13% for light players. 26% of the light players read about it in the press (probably in SCIENCES ET AVENIR), as compared to 15% of the heavy players. The social networks seem to

be efficient in making players come back to play again, but not in introducing new players to the game (only 9% of the light players and none of the heavy players).

When heavy players are asked about their motivations for playing, the most common answers are: “I like playing”, “I like linguistics” and “to help science” (each are selected by 55% of these players). This confirms that the gamification of a crowdsourcing task is an important aspect to increase the quantity of produced data.

For the light players, the most popular answers are: “out of curiosity” (70%) and “to help science” (66%). The citizen science aspect is therefore important for them (especially for the readers of SCIENCES ET AVENIR).

## 3 Conclusion

Apart from what is documented in (Chamberlain et al., 2013), very few such surveys were led on the subject for GWAPs. It will allow us to try and extend our player range (especially heavy players), to women, less-educated and older persons, for example by selecting specific corpora to annotate.

## References

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